DOCUMENT RESUME

ED 413 782 FL 024 897

AUTHOR	Griffee, Dale T.; Templin, Stephen A.
TITLE	Goal-Setting Affects Task Performance.
PUB DATE	1997-00-00
NOTE	18p.
PUB TYPE	Reports - Research (143)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*English (Second Language); Foreign Countries; *Goal Orientation; High Schools; Second Language Instruction; *Student Motivation; *Vocabulary Development
IDENTIFIERS	*Goal Setting; Japan; *Task Goal Attitudes

ABSTRACT

A study investigated the effect of assigning difficult, specific goals on a 50-item vocabulary test to Japanese high school students of English as a Second Language. Subjects were five intact ESL classes (n=190 students) divided into experimental and control groups. A vocabulary-recognition matching pretest was administered to all subjects. After the test, all students were given the correct answers and asked to check them for 10 minutes. The experimental group was instructed to memorize 15-30 words missed, with the specific number based on pretest performance; the control group was given no additional instructions. All students were then posttested with the same instrument. Results indicate mean score improvements for both groups. Control group subjects almost doubled their mean scores. Experimental group subjects showed greater improvements in scores, with the greatest improvement in subjects who missed 25 items on the pretest. It is concluded that for learners to achieve their highest task performance, specific, difficult goals are more effective motivators than vague, easy, or "impossible" goals. Contains 18 references. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

Running Head: Goal-Setting

Word Count: 2,714

ED 413 782

Goal-Setting Affects Task Performance

Dale T. Griffee
Seigakuin University

Stephen A. Templin
Kanagawa Board of Education

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
Stephen A. Templin
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

FL024897

BEST COPY AVAILABLE

Abstract

Despite the fact that current SLA literature often mentions course goals and that research in psychology has shown that specific, difficult goals lead to higher task performance (Locke & Latham, 1990), surprisingly little classroom research has been done in EFL/ESL on the effects of goals on task performance. This study examines the effects of general, easy goals and specific, difficult goals on task performance.

Five intact classes of 190 Japanese 10th grade students participated in the study. Subjects took a 50-word vocabulary recognition pretest (Nation, 1990, pp.79) which showed .74 reliability using K-R20. Each class was then assigned a different goal to be accomplished in a 10-minute period. The control class was given no goal, the experimental classes were asked to learn, respectively, 15, 20, 25, and 30 words they missed on the pretest. The effects of these goals were measured by students' performance on a second version of the pretest, .87 reliable with a K-R20. Differences between classes were calculated by analysis of variance (ANOVA). Results of the ANOVA and Scheffe post hoc test showed statistically significant differences between the control group and all specific, difficult groups except the 30 goal group. These results provide support for Locke's goal theory in an EFL context. Assigning students specific and difficult goals enhances performance up to the point where the goal is perceived as too difficult. The trick is to find specific, difficult goals that are perceived by students as challenging, but not impossible.

Goal-setting Affects Task Performance

The use of goals to motivate students has recently become an emerging concept in ESL (Gorsuch, 1991; Griffee, 1995; 1997; Punnett, 1986; Templin, 1995). Major studies involving goals come primarily from experimental psychology and applied management research (Mento, Steel & Karren, 1987). As formulated by Locke (1968) and Locke and Latham (1990), there are two major premises of goal-setting theory. They are first, difficult goals result in higher levels of task performance than easy goals. Second, specific, hard goals produce higher performance than general "do best" instructions or no goals at all. A third premise, that performance feedback is necessary for effective goal-setting, was added by Locke, Saari, Shaw, & Latham (1981). Given the large number of studies on goal-setting, a review and two meta-analyses will be surveyed and their results reported.

In the first study, a traditional narrative literature review, Locke et al. (1981) define a goal as what a person is trying to accomplish. There are several other concepts with similar meanings: purpose, intent, performance standard, quota, work norm, task, objective, deadline, and budget. Of the 110 studies published from 1969 to 1980 which were examined, 99 supported the hypotheses that specific, hard goals produce better performance than medium, easy, do-best, or no goals. Knowledge of results or feedback was examined in 10 studies and support the idea that neither feedback nor goals alone is sufficient, but goals and feedback are necessary to improve performance.

Tubbs (1986) conducted a statistically oriented meta-analysis and looked at 87 studies with 147 usable results. Tubbs adjusted the mean and variance for effect sizes and also corrected for sampling error and unreliability. He also examined a fourth hypothesis: allowing subjects to participate in choosing their own goals has a direct influence on their performance. Tubbs found support for the difficult goals hypothesis, specific goals hypothesis (as opposed to vague or general goals), and the participatory goals hypothesis, but less support for the feedback hypothesis because of small sample number of studies. Tubbs concludes that goal difficulty, goal specificity, and participation in the goal-setting process are all necessary, and that the feedback hypothesis was somewhat supported but in need of more empirical support.

In the third meta-analytic study, Mento, Steel & Karren (1987) first sought to determine

the effect of goal difficulty and goal specificity/difficulty on task performance and then looked at five moderating variables: setting (laboratory or field), study type (experimental or correlational), level of education, feedback, and incentives. This study made use of meta-analytic moderator analysis and multiple regression analysis. Effect sizes for all studies were corrected for sample size, corrections for measurement unreliability were made for predictor variables, and sampling error was calculated. Seventy studies were available for goal difficulty analysis, 49 for goal specificity/difficulty analysis, and 58 studies were available for moderator variable information. Both goal difficulty and goal difficulty/specificity were found to exert strong influence on performance. Using the multiple regression approach to examine the five moderators, the setting (laboratory or field) was found to significantly moderate goal specificity/difficulty performance relationships, but the other four moderator variables did not.

Two supplemental analyses were performed to focus on feedback and participation in goal-setting. Three studies were examined for feedback and it was concluded that "the presence of feedback had a considerable impact on performance when used in conjunction with difficult specific goals" (Mento et al. 1987, p. 72). Seven studies were identified which contained the necessary statistics for analysis of the effect of participation in goal selection and "the participative goal-setting groups performed at higher levels than individuals in the assigned goal-setting conditions" (Mento et al. 1987, p. 73). It is concluded that this meta-analytic study provides additional support for the two major premises of Locke's (1968) theory of goal-setting as an important motivational factor. Further, it is noted:

> It there is ever to be a viable candidate from the organizational sciences for the elevation to the lofty status of a scientific law of nature, then the relationships between goal difficulty, specificity/difficulty, and task performance are most worthy of serious consideration (Mento et al. 1987, p. 74).

Mento and colleagues conclude by saying that perhaps little more can be gained by continuing to replicate goal difficulty and goal specificity/difficulty studies and attention needs to be directed toward understanding the mechanisms which underlie these relationships.

The purpose of this paper is to investigate the effect of assigning difficult, specific goals to Japanese high school students on a vocabulary test. The research question is, will the assigning of

difficult and specific goals result in a statistically significant gain on a 50-word vocabulary test as compared to a control group assigned a general, easy goal (no-goal).

Method

Subjects

In Winter 1997, five intact classes (N = 190, 93 males and 97 females) of 10th grade students were randomly selected at a Japanese public high school in Kanagawa Prefecture. The school is ranked 3rd out of 10 public high schools in an urban area. The following gives students' pursuits upon graduation: preparatory school (33%), university (24%), vocational school (20%), junior college (18%), undecided (3%), civil servants (1%), and other occupations (1%). No reliable and valid proficiency measurements for these participants were available.

Materials

Content validity. The instruments were designed to measure students' performance in learning receptive vocabulary they did not know previously. A vocabulary-recognition matching pretest (Appendix A) and posttest (Appendix C) were created, based on similar tests described by Nation (1990, p. 79). Fifty vocabulary words were selected (Appendix D): five from the Ministry of Education, Science, and Culture list of 507 vocabulary words for junior high school (1994, pp. 103-106) and 45 appearing in both Nation's (1990, pp. 235-239) University Word List and Sharpe's (1989, pp. 268-284) word list for preparing for the Test of English as a Foreign Language (TOEFL). The purpose of this is to give the students at least five vocabulary most of them know (from the junior high list) so they will not be totally discouraged, and challenge them with about 45 vocabulary they do not know. Japanese equivalents for each word were taken from Sanseido's (1990) dictionary. The posttest is the same test as the pretest, except that the items are in different order.

Previous versions of the tests, answers, and treatment were reviewed by ten high school and three college English instructors. A consensus was reached that learning 25 words would be the most specific, difficult goal for students, without being "impossible." The researchers chose to add the 30-word goal to see if students would plateau at the 25-word level or perform higher.

In considering construct validity, students scored higher on the posttest than on the pretest (see Table 2 in Results), showing that the tests measure the performance of students who learned

receptive vocabulary.

As for criterion-related validity, there were no reliable and valid test scores available to compare the results of this test with. Reliability was measured using a K-R20 (Brown, 1996) for each class (See Table 1).

Table 1

Pretest & Posttest Reliability (K-R20)

	Classes (Number of vocabulary to learn)					
Test	Control	15	20	25	30	All Classes
Pretest	.73	.76	.80	.66	.73	.74
Posttest	.89	.68	.89	.82	.90	.87

Overall, the reliability is lower on the pretest, .74, than the posttest, .87, because most students did poorly on the pretest, causing the scores to skew (see Table 2 in Results)--this was to be expected since the purpose of the pretest was to give every student a large number of vocabulary they did not know.

Procedures

Students were given seven minutes to complete the pretest (Appendix A). One of the researchers gave each student in each class the same pretest. After the seven minutes for taking the pretest expired, the researcher gave students the pretest answers (Appendix B). The instructions on the pretest answer sheet served as the control and treatment for the experiment. The first part of the instructions was the same for all classes: "You will have 10 minutes to complete the instructions below. First, check your answers (do not change your answers)."

The next part of the instructions was different for each class. The control group, received no goals: "You have free time until your papers are collected. (However, do not leave your seat, become loud, or cause a disturbance.)" The four experimental classes were given goals: memorize

15, 20, 25, and 30 words you missed, respectively. Both control and experimental received the same final instructions, "These papers will be collected in 10 minutes." The researcher collected the pretests after 10 minutes. Next the researcher handed students the posttest (Appendix C), which was the same for students in the control and experimental classes. Students had seven minutes to complete the posttest. After completing the posttest, students handed their papers in to the researcher. The total time to carry out the experiment was about 36 minutes for each class. The answer sheet for the posttest is in Appendix D.

Analyses

A .05 alpha level of significance was set. Analysis of variance (ANOVA) of the data were carried out to see if any of the experimental groups were statistically significantly different from the control group. The assumptions of ANOVA were checked (Hatch & Lazaraton, 1991, p. 328). An F test for homogeneity of variance was calculated for all pretest scores to determine if any of the group variances were significantly different and none were, indicating that for the pretest all groups are approximately equal. The data were analyzed with the StatView 4.5 (1992) statistical package for the Macintosh.

Results

The descriptive statistics for all group pretest scores and posttest scores are shown in Table 2. The pretest mean scores show that all five groups are about equal with the 15 group (the group assigned the difficult and specific goal of 15) and the 20 group slightly higher than the no-goal group, the 25 group and the 30 group. The equality of all five groups is further indicated by the results of an F test for homogeneity of variance in which all possible group comparisons were calculated. Results of this test indicated that none of the groups were within the alpha probablilty of having significantly different variance.

The posttest mean scores show improvement for all groups. The general, easy goal (no-goal) group, which serves as the control group, almost doubled its scores from about 9 to about 16. All of the experimental groups did better than the control group with the most significant improvement in the 25 group which went from an average score of about 9 to about 23.

Table 2

Descriptive Statistics for all Groups' Pre and Posttest scores

	Mean		Stand Dev		Minimum		Maximum		Skewness		Kurtosis	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
No	8.72	15.49	3.29	7.00	3.0	3.0	17.0	40.0	.629	1.076	.132	2.302
15	10.10	20.58	3.72	4.95	5.0	9.0	20.0	29.0	1.062	-.275	.704	-.532
20	10.34	22.21	3.86	8.21	3.0	10.0	27.0	43.0	2.023	.876	7.519	.400
25	9.14	23.03	3.16	8.21	3.0	8.0	16.0	42.0	.326	.667	-.309	.865
30	8.69	17.05	3.16	7.60	3.0	8.0	16.0	42.0	1.347	1.002	-.309	1.123

Note: No = General, easy goal (no-goal) control group; 15 = goal of 15 group; 20 = goal of 20 group; 25 = goal of 25 group; 30 = goal of 30 group.

We can see from the descriptive statistics that compared to the control group (the general, easy goal group), all the groups with more specific, difficult goals did better. The question is, is this difference more than what we might expect by chance fluctuation alone. To answer this question, a one-way analysis of variance (ANOVA) was calculated to determine if the posttest mean scores are statistically significantly different from each other.

The results of the ANOVA test, seen below in Table 3, show that at least some of the scores are statistically significantly different. A Scheffe test indicates that, as expected, the control group is statistically different from the 15, 20 , and 25 groups, but not the 30 group. Eta squared is 0.15.

Table 3

ANOVA for Posttest Classes

Source	df	Sum of Squares	Mean Squares	F-value	P-value
Posttest classes	4	1648.112	412.028	8.466	<.0001
Residual	185	9003.682	48.669		
Total		10651.1794			

Discussion

The 15, 20, and 25-word goal groups scored significantly higher on the posttest than the general, easy (no-goal) group, supporting the hypothesis. As anticipated, instead of plateauing or rising above the 25-word group, the 30-word group showed no significant difference from the no-goal control group--this seems to suggest that the goal was too high, discouraging students from attaining their peak performance.

Although the control group was given no goals to study vocabulary some students studied the vocabulary they missed, anyway. This might explain why this group was able to nearly double the average of their scores on the posttest. Another reason might be that they learned vocabulary/how to take the test from taking the pretest.

The implications for this study suggest that, in order for learners to achieve their highest task performance, they need specific, difficult goals rather than vague, easy or "impossible" goals.

Conclusion

The reliability of the instruments in this study can be improved in two ways. First, the total number of questions on the tests can be shortened from 50 to 40, but the choices should remain at 50--this will reduce the chance for students to guess correct answers by the process of elimination.

Second, equivalent forms could be used for the tests. For the pretest, half of the students receive Form A and half receive Form B, a different but equivalent test. For the posttest the students who received Form A receive Form B and vice versa. This way, the researcher can correlate the coefficients between the two sets of scores, both pretest and posttest, to gain more

information about the tests' reliability.

Although not possible in this study, comparing other reliable and valid test scores of students' overall language proficiency (such as the TOEFL) with the tests used in this study will help determine criterion-related validity of this test.

The research here suggests at least five areas for future research:

1) Can these results be replicated with other populations of students (different ages, nationalities, etc.) and parts of language acquisition (grammar, discourse, sociolinguistic knowledge, strategies, etc.)?

2) Will these results hold true outside of the classroom?

3) How are learners' goals related to the following: self-efficacy, one's appraisal of how well one can achieve a goal (Templin, 1997); mediating strategies; moderators such as ability, commitment, feedback (Griffee, 1997), task complexity, and situational constraints; and rewards?

4) How do student-generated goals (Griffee, 1995) compare with goals set by others?

5) To what degree do goals predict variation in L2 acquisition?

Although goal-setting seems to be an important part of L2 acquisition, the areas for exploration are wide open for further studies.

References

Brown, J. D. (1996). *Testing in language programs*. Upper Saddle River, NJ: Prentice Hall Regents.

Gorsuch, G. (1991). Helping students create their own goals. *The Language Teacher, 15*, 3-9.

Griffee, D. T. (1995). Student generated goals and objectives in a learner-centered classroom. *The Language Teacher, 19* (12), 14-17.

Griffee, D. T. (1997). Using goals and feedback to improve student performance on homework. *The Language Teacher, 21* (7), 19-25.

Hatch, E., & Lazaraton, A. (1991). The research manual: Design and statistics for applied linguistics. Newbury House.

Locke, E. (1968). Toward a theory of task motivation and incentives. *Organizational Behavior and Human Performance, 3*, 157-89.

Locke, E., & Latham, G. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, N.J.: Prentice Hall.

Locke, E., Sarri, L., Shaw, K., & Latham, G. P. (1981). Goal setting and task performance: 1969-1980. *Psychological Bulletin, 90*, 125-152.

Mento, A. J., Steel, R. P., & Karren, R. (1987). A meta-analytic study of the effects of goal setting on task performance: 1966-1984. *Organizational Behavior and Human Decision Processes, 39*, 52-83.

Ministry of Education, Science and Culture. (1994). *Handbook for team-teaching*. Tokyo: Ministry of Education, Science, and Culture.

Nation, I. S. P. (1990). *Teaching and learning vocabulary*. Boston: Heinle and Heinle.

Punnett, B. (1986). Goal setting and performance among elementary school students. *Journal of Educational Research, 80* (1), 40-42.

Sanseido. (1990). *Sanseido's daily concise English dictionary*. Tokyo: Sanseido.

Sharpe, P. J. (1989). *TOEFL: How to prepare for the Test of English for Speakers of Other Languages*. Hauppauge, New York: Barron's Educational Series, Inc.

StatView 4.5 [Computer software]. (1992). Berkeley, CA: Abacus Concepts.

Templin, S. A. (1995). Goal-setting to raise speaking self-confidence. *JALT Journal, 17*, (2), 269-273.

Templin, S. A. (1997). *Self-efficacy influences L2 achievement*. Unpublished manuscript.

Tubbs, M. (1986). Goal setting: A meta-analytic examination of the empirical evidence. *Journal of Applied Psychology, 71* (3), 474-483.

Appendix A

Test

___Year___Section___Student # Name_____

Match the English word with the Japanese and write the appropriate letter in the blank. Each set of 10 words has ten possible choices. (You have 7 minutes to complete this test.)

Example

1. c pen	a. えんぴつ
2. a pencil	b. 本
3. b book	c. ペン

1.__	accurate	a. 制限する
2.__	new	b. 断言する
3.__	modify	c. 予言する
4.__	confine	d. 正確な
5.__	yesterday	e. 修正する
6.__	predict	f. きのう
7.__	explicit	g. 明白な
8.__	assert	h. 先立つ
9.__	fraction	i. 少部分
10.__	precede	j. 新しい

11.__	enhance	a. 繁栄（成功）する
12.__	obsolete	b. 欠陥
13.__	incessant	c. 革新
14.__	prosper	d. （芝居の）休憩時間
15.__	vibrate	e. 隣接する
16.__	expand	f. 旧式の
17.__	defect	g. 絶え間のない
18.__	interval	h. 振動する
19.__	adjacent	i. 高める
20.__	innovation	j. 広げる

21.__	hypothesis	a. 年々の
22.__	ignore	b. 真実の
23.__	decline	c. 仮説
24.__	detect	d. 見つける
25.__	reluctant	e. 無視する
26.__	annual	f. 意味（暗示）する
27.__	margin	g. 気の進まない
28.__	quickly	h. 急いで
29.__	genuine	i. ふち
30.__	imply	j. 傾斜

31.__	random	a. 所有者
32.__	energy	b. 手当り次第の
33.__	asset	c. エネルギー
34.__	decade	d. 複雑な
35.__	identical	e. 同一の
36.__	complex	f. 資産
37.__	happy	g. 幸福な
38.__	leisure	h. 積もる
39.__	accumulate	i. 十年間
40.__	proprietor	j. 暇な

41.__	deprive	a. 奪う
42.__	arouse	b. 利用する
43.__	goal	c. 刺激する
44.__	deviate	d. 目をさまさせる
45.__	perpetual	e. 考える
46.__	appropriate	f. 適当な
47.__	exploit	g. 伸げる
48.__	provoke	h. (わきに)それる
49.__	dedicate	i. ゴール
50.__	think	j. 永久の

Appendix B

Test Answers

---

1. You will have 10 minutes to complete the instructions below.
2. First, check your answers (do not change your answers).
3. You have free time until your papers are collected. (However, do not leave your seat, become loud, or cause a disturbance.) These papers will be collected in 10 minutes.

1.	d accurate	正確な
2.	j new	新しい
3.	e modify	修正する
4.	a confine	制限する
5.	f yesterday	きのう
6.	c predict	予言する
7.	g explicit	明白な
8.	b assert	断言する
9.	i fraction	少部分
10.	h precede	先立つ

11.	i enhance	高める
12.	f obsolete	旧式の
13.	g incessant	絶え間のない
14.	a prosper	繁栄（成功）する
15.	h vibrate	振動する
16.	j expand	広げる
17.	b defect	欠陥
18.	d interval	（芝居の）休憩時間
19.	e adjacent	隣接する
20.	c innovation	革新

21.	c hypothesis	仮説
22.	e ignore	無視する
23.	j decline	傾斜
24.	d detect	見つける
25.	g reluctant	気の進まない
26.	a annual	年々の
27.	i margin	ふち
28.	h quickly	急いで
29.	b genuine	真実の
30.	f imply	意味（暗示）する

31.	b random	手当り次第の
32.	c energy	エネルギー
33.	f asset	資産
34.	i decade	十年間
35.	e identical	同一の
36.	d complex	複雑な
37.	g happy	幸福な
38.	j leisure	暇な
39.	h accumulate	積もる
40.	a proprietor	所有者

41.	a deprive	奪う
42.	d arouse	目をさまさせる
43.	i goal	ゴール
44.	h deviate	(わきに)それる
45.	j perpetual	永久の
46.	f appropriate	適当な
47.	b exploit	利用する
48.	c provoke	刺激する
49.	g dedicate	捧げる
50.	e think	考える

Appendix C

Test 2

___Year___Section___Student # Name_____ (Romanized)

Match the English word with the Japanese and write the appropriate letter in the blank. Each set of 10 words has ten possible choices. (You have 7 minutes to complete this test.) **Caution: These are not in the same order as the previous test.**

Example

1. c pen	a. えんぴつ
2. a pencil	b. 本
3. b book	c. ペン

1.__	complex	a. 永久の
2.__	annual	b. 複雑な
3.__	perpetual	c. 制限する
4.__	confine	d. 奪う
5.__	accumulate	e. 年々の
6.__	deprive	f. 手当り次第の
7.__	happy	g. 革新
8.__	random	h. きのう
9.__	innovation	i. 積もる
10.__	yesterday	j. 幸福な

11.__	prosper	a. ゴール
12.__	enhance	b. 明白な
13.__	decline	c. 急いで
14.__	goal	d. 適当な
15.__	quickly	e. 繁栄（成功）する
16.__	precede	f. 先立つ
17.__	expand	g. 高める
18.__	vibrate	h. 振動する
19.__	explicit	i. 傾斜
20.__	appropriate	j. 広げる

21.__	fraction	a. 利用する
22.__	incessant	b. 隣接する
23.__	obsolete	c. 欠陥
24.__	proprietor	d. 考える
25.__	think	e. 旧式の
26.__	interval	f. 絶え間のない
27.__	exploit	g. 無視する
28.__	defect	h. 少部分
29.__	adjacent	i. (芝居の) 休憩時間
30.__	ignore	j. 所有者

31.__	provoke	a. 暇な
32.__	margin	b. 修正する
33.__	predict	c. 新しい
34.__	detect	d. 刺激する
35.__	reluctant	e. 見つける
36.__	accurate	f. 正確な
37.__	modify	g. 仮説
38.__	leisure	h. 気の進まない
39.__	hypothesis	i. 予言する
40.__	new	j. ふち

41.__	dedicate	a. (わきに)それる
42.__	identical	b. 捧げる
43.__	decade	c. 真実の
44.__	energy	d. エネルギー
45.__	genuine	e. 断言する
46.__	asset	f. 同一の
47.__	assert	g. 資産
48.__	imply	h. 目をさまさせる
49.__	deviate	i. 意味（暗示）する
50.__	arouse	j. 十年間

Appendix D

Test 2 Answers

*The five words with asterisks were randomly selected from the Japan Ministry of Education, Science, and Culture (1994, pp. 103-106) list of vocabulary for junior high school students.

1.b complex b. 複雑な
2.e annual e. 年々の
3.a perpetual a. 永久の
4.c confine c. 制限する
5.i accumulate i. 積もる
6.d deprive d. 奪う
7.j happy* j. 幸福な
8.f random f. 手当り次第の
9.g innovation g. 革新
10.h yesterday* h. きのう

11.e prosper e. 繁栄（成功）する
12.g enhance g. 高める
13.i decline i. 傾斜
14.a goal a. ゴール
15.c quickly* c. 急いで
16.f precede f. 先立つ
17.j expand j. 広げる
18.h vibrate h. 振動する
19.b explicit b. 明白な
20.d appropriate d. 適当な

21.h fraction h. 少部分
22.f incessant f. 絶え間のない
23.e obsolete e. 旧式の
24.j proprietor j. 所有者
25.d think* d. 考える
26.i interval i. (芝居の) 休憩時間
27.a exploit a. 利用する
28.c defect c. 欠陥
29.b adjacent b. 隣接する
30.g ignore g. 無視する

31.d provoke d. 刺激する
32.j margin j. ふち
33.i predict i. 予言する
34.e detect e. 見つける
35.h reluctant h. 気の進まない
36.f accurate f. 正確な
37.b modify b. 修正する
38.a leisure a. 暇な
39.g hypothesis g. 仮説
40.c new* c. 新しい

41.b dedicate b. 捧げる
42.f identical f. 同一の
43.j decade j. 十年間
44.d energy d. エネルギー
45.c genuine c. 真実の
46.g asset g. 資産
47.e assert e. 断言する
48.i imply i. 意味（暗示）する
49.a deviate a. (わきに)それる
50.h arouse h. 目をさまさせる

Authors Note

Dale Griffee can be contacted at Seigakuin University, 1-1 Tosaki, Ageo-shi, Saitama-ken 362, Japan.

Stephen Templin can be contacted at Green Valley Ohzenji A-105, 1937 Ohzenji, Asao-ku Kawasaki-shi 215-0013, Japan.

About the Authors

Dale Griffee is associate professor at Seigakuin University. He is series editor of the *JALT Applied Materials* series. His research interests are curriculum, criterion-referenced testing, and program evaluation.

Stephen Templin teaches and researches for the Kanagawa Board of Education. His publications have appeared in *The Language Teacher*, *JALT Journal*, and he is the author of *Communicative Tool Box for Japanese Students* (Seido).